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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/938,496 | 08/27/2001 | Hideo Miyake | 1614.1181 | 2883 |
| 21171 7590 06/11/2007 STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | EXAMINER BATES, KEVIN T | |
| | | | ART UNIT 2155 | PAPER NUMBER |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/938,496

Applicant(s)

MIYAKE ET AL.

Examiner

Kevin Bates

Art Unit

2155

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5, 7, 8, 10-13, 15-18 and 20-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5, 7-8, 10-13, 15-18, and 20-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

This Office Action is in response to a communication received on May 8, 2007.

The Information Disclosure Statements have been received on March 14, 2007 and February 7, 2007. The Foreign Document, Japanese Patent Application No. 2000-386032, cannot be considered since there is no explanation of the contents or an abstract in English.

Claims 1, 6, 9, 14, and 19 have been cancelled.

Claims 3, 11-13, 15, 17-18 and 21-22 have been amended.

Claims 2-5, 7-8, 10-13, 15-18, and 20-22 are currently pending in this application.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The current title "Computer and Control Method of the Computer" does not clearly indicate the invention to which the claims are directed. The invention is pointed toward handling interrupts in a computer processor, not controlling a computer, please amend the title or the examiner will change the title when the change is necessary.

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not provide support for the amendment to the claims. More specifically, the section that provides support for the parallel processing of the plurality of instructions found on Page 32, line 26 to Page 33,

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line one does not anticipate the claim limitation of holding in memory the addresses of a plurality of instructions when an interrupt is processed. The specification only goes as far to show that a plurality of data holding parts may be in parallel, it does not go into any detail on how the operation of these data parts effects the parallel processing of the instructions.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-5, 7-8, 10-13, 15-18, and 20-22 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not provide support for the amendment to the claims. More specifically, the section that provides support for the parallel processing of the plurality of instructions found on Page 32, line 26 to Page 33, line one does not anticipate the claim limitation of holding in memory the addresses of a plurality of instructions when an interrupt is processed. The specification only goes as far to show that a plurality of data holding parts may be in parallel, it does not go into any detail on how the operation of these data parts effects the parallel processing of the instructions.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-5, 7-8, 10-13, 15-18, and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The idea of storing a plurality of addresses of instructions operating in parallel is unclear because there is no support for the idea in the specification.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 5, 8, 10, 13, 16, 16-18, and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Computer Organization & Design (Computer Organization & Design; Patterson et. al.) (Hereinafter Patterson) in view of Sakamura (5182811).

Regarding claims 17, 21, and 22, Patterson teaches a computer which processes an interrupt of a program caused by an exception operation when an instruction is executed (Page 223, Paragraph 1), said computer comprising:

A data holding part holding said instruction when the instruction processing starts (Page 223, Paragraph 1).

Patterson does not explicitly indicate that there are a plural instructions in parallel and having the memory store the addresses of the plural instructions during the interrupt.

Sakamura teaches an interrupt system that includes storing the addresses of instructions operating in parallel when an interrupt occurs (Column 2, lines 13 – 37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Sakamura's teaching in order to allow Patterson's system to operating an a parallel or pipelined instruction system.

Regarding claims 2 and 10, Patterson teaches that the storage medium is a plurality of registers (Page 223, Paragraph 1).

Regarding claims 5 and 13, Patterson teaches that said data holding part holds an instruction address of an instruction which causes said interrupt (Page 223, Paragraph 2).

Regarding claims 8, 16, and 18, Patterson teaches that said data is used for recovery from said interrupt (Page 223, Paragraph 2).

Regarding claim 20, Patterson teaches that the interrupt processing is initiated by an exception operation (Page 223, Paragraph 1).

Claims 3-4, 7, 11-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Computer Organization & Design; Patterson et. al. in view of Sakamura, and in further view of Cheong (6098167).

Regarding claims 4 and 12, Patterson teaches the computer claimed in claims 21 and 22.

Patterson does not explicitly indicate that when a stored instruction gets interrupted, said store instruction requested said data is stored at the data storing part.

Cheong teaches a system for allowing interrupts of instructions, where there is a data holding part for holding the interrupted instruction (Column 15, line 64 – Column 16, line 3), that data from the instruction is maintained (Column 15, line 64 – Column 16, line 3) and that this includes store instructions (Column 16, lines 5 – 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Cheong's teaching of holding more information about the interrupted instruction in Patterson in order to allow out of order processing while maintaining storage consistency.

Regarding claims 7 and 15, Patterson teaches the computer in claims 21 and 22.

Patterson does not explicitly indicate wherein said data holding part holds an effective address of a load or store instruction when said interrupt occurs during said instruction.

Cheong teaches a system for allowing interrupts of instructions, where there is a data holding part for holding the interrupted instruction (Column 15, line 64 – Column

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16, line 3), that data from the instruction is maintained (Column 15, line 64 – Column 16, line 3) and that this includes store and load instructions (Column 16, lines 5 – 7).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Cheong's teaching of holding more information about the interrupted instruction in Patterson in order to allow out of order processing while maintaining storage consistency.

Regarding claims 3 and 11, Patterson teaches the computer in claims 2 and 10.

Patterson does not explicitly indicate teaches that flags indicate whether said data is held in said register.

Cheong teaches that flags indicate whether said data is held in said register (Column 16, lines 43 – 51).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Cheong's teaching of holding more information about the interrupted instruction in Patterson in order to allow out of order processing while maintaining storage consistency.

Response to Arguments

Applicant's arguments with respect to claims 17, 21, and 22 have been considered but are moot in view of the new ground(s) of rejection.

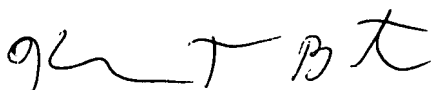
Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Bates whose telephone number is (571) 272-3980. The examiner can normally be reached on 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read 'Kevin Bates', with a stylized flourish at the end.

Kevin Bates
June 7, 2007